

Remarks

Applicants request favorable reconsideration and allowance of this application in view of the foregoing amendments and the following remarks.

Claims 1- 4, 8-10, 18-23, 27-29, and 37-39 are pending in this application, with Claims 1, 20, and 39 being independent.

Claims 1, 20, and 39 have been amended. Applicant submits that support for the amendments can be found in the original disclosure at least, for example, in Fig. 11 and the corresponding description. Therefore, no new matter has been added.

Claims 1-4, 8-10, 18-23, 27-29 and 37-39 remain rejected under 35.U.S.C. §102(b) as being clearly anticipated by U.S. Patent No. 5,577,981 (Jarvik). Applicants respectfully traverse this rejection for the reasons discussed below.

As recited in Claim 1, the present invention includes, *inter alia*, the features of acquiring geometric information of real object(s) and stored rules for controlling the action of virtual object(s), wherein the rules control the action of the virtual object(s) on the basis of an objective and relative location relationship between the virtual object(s) and the real object(s) that is represented by the geometric information. To aid the Examiner, and without intending to limit the claims to any particular disclosed embodiment, Applicants note that the real object(s) may correspond, for example, to the real object shown in Fig. 11, i.e., a real object in a playfield. By managing real objects using geometric information, the invention of Claim 1 can geometrically handle the relationship between virtual object(s) and real object(s).

Applicants submit that Jarvik fails to disclose or suggest at least the above-mentioned features recited in Claim 1. That patent is directed to controlling the generation of

virtual object(s) based on forces input to or a three-dimensional position of a real object (for example, a handle). That patent does not disclose or suggest acquiring or using geometrical information of the real object(s).

The Office Action asserts that Fig. 10 and the corresponding description of Jarvik anticipates the claims. Applicants respectfully disagree. In that patent, an apparatus senses or detects (i) a three-dimensional position of a real object (Step 81), (ii) a three-dimensional position and orientation of a display screen (Step 83), and (iii) forces applied to a real object (Step 89). At Step 91, the apparatus computes the velocity, acceleration, and direction of motion that the sensed forces would impact to the virtual object(s) if they were real, and at Step 93 it computes the positions, velocity, and acceleration that the virtual object(s) would reach in a finite time interval, e.g., 0.03 seconds.

In Jarvik, therefore, the user's operation of a real object (e.g., the handle) to apply a force thereto is necessary to determine the next action of the virtual object(s). If the user does not move any real object(s), none of the virtual object(s) move. In other words, Jarvik determines the next action of the virtual object(s) from user inputs (e.g., applied forces) and physical laws. This is in sharp contrast to the present invention, which does not require a user's operation of real object(s) or other user inputs to determine the next action of the virtual object(s) because, as recited in Claim 1, the rules control the action of the virtual object(s) on the basis of an objective and a relative location *relationship* between the virtual object(s) and the real object(s) that is *represented by geometric information* acquired by the simulator. As is clearly indicated in Step 93, the next action of a virtual object in Jarvik does not depend on the relative position between a real object and a virtual object (e.g., between the handle and the image).

For the foregoing reasons, Applicants submit that the present invention recited in Claim 1 is patentable over Jarvik. Independent Claims 20 and 39 recite similar features and are believed to be patentable for similar reasons. The dependent claims are believed patentable for at least the same reasons as the independent claims they depend from, as well as for the additional features they recite.

In view of the foregoing, Applicants submit that this application is in condition for allowance. Favorable reconsideration, entry of this Amendment, withdrawal of the rejection set forth in the above-mentioned Office Action, and an early Notice of Allowance are requested.

Applicants' undersigned attorney may be reached in our Washington, DC office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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